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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,469	12/03/2003	Jac-Bon Koo	61610094US	3693

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EXAMINER

SAID, MANSOUR M

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/725,469	<b>Applicant(s)</b> KOO ET AL.	
	<b>Examiner</b> MANSOUR M. SAID	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-14, 16-17, 19-21 and 32 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 15, 18 and 22-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/03 &amp; 7/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 6,876,001 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-32 of current Application are broader than claims 1-23 of U.S. Patent No. 6,876,001 B2.

The omission of an element and its function where not needed is obvious. *Ex parte Rainu*, 168 USPQ 375 (PTO Bd. Of App. 1969). The omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before. *In re Karlson*, 136 USPQ 184 (CCPA 1963).

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**3. Claim 1-8, 11-14, 16-17, 19-21 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Koo et al. (6,876,001 B2; hereinafter referred to as Koo).**

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claim 1, Koo teaches a flat panel display comprising (figure 1 and column 5, lines 20-35): a plurality of pixels (figure 1), each pixel including a plurality of sub-pixels (figure 1 and column 5, lines 20-35), and each sub-pixel comprising a self-luminescent element (figure 1 and column 5, lines 20-55); and driving thin film transistors (figure 1 and column 5, lines 20-55), wherein each thin film transistor has a semiconductor active layer with a channel region electrically connected to each of the self-luminescent elements to supply current to each of the self-luminescent elements, wherein the channel regions of the semiconductor active layer in at least two sub-pixels are arranged in different directions (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

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**As to claim 2**, Koo teaches wherein the sub-pixels have different colors (figures 1 & 5-8 and column 5, lines 20-67).

**As to claim 3**, Koo teaches wherein the channel regions in the sub-pixels of different colors are arranged in different directions (figures 1 & 5-8, column 5, lines 55-67 and column 6, lines 1-30).

**As to claims 4 and 13**, Koo teaches wherein the different directions of the channel regions are determined by an amount of current flowing in the self-luminescent element of the sub-pixels of different colors when a substantially identical driving voltage is applied to the sub-pixels of different colors (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

**As to claim 5**, Koo teaches wherein the different directions of the channel regions are determined by different mobility values of the channel regions of the driving thin film transistors of the sub-pixels of different colors (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

**As to claims 6 and 19**, Koo teaches wherein the semiconductor active layers are formed of polycrystalline silicon (figures 1 & 5-8, column 6, lines 9-23 and column 7, lines 12-23).

**As to claims 7 and 20**, Koo teaches wherein the polycrystalline silicon has anisotropic grains (figures 1 & 5-8 and column 6, lines 9-23).

**As to claim 8**, Koo teaches wherein the different directions of the channel regions are determined by directions of grain boundaries of the polycrystalline silicon of the channel regions (figures 1 & 5-8 and column 5, line 55 through column 6, line 67).

**As to claims 11 and 32**, Koo teaches wherein the polycrystalline silicon is formed using

a solidification method involving a laser (figure 2 and column 7, lines 10-23).

**As to claim 12**, Koo teaches A flat panel display comprising: a plurality of pixels (figure 1 and column 5, lines 20-35), each pixel including a red sub-pixel, a green sub-pixel and a blue sub-pixel, each sub-pixel comprising a self-luminescent element (figure 1 and column 5, lines 20-35); and driving thin film transistors (figure 1 and column 5, lines 20-55), wherein each thin film transistor has a semiconductor active layer having a channel region connected to the self-luminescent elements of the sub-pixel in order to supply current to the self-luminescent element, wherein the channel regions of the semiconductor active layers in at least two different colored sub-pixels are arranged in different directions (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

**As to claims 14**, Koo teaches wherein the different directions of the channel regions are determined so that a current of a smallest amount flows in the self-luminescent elements of the green sub-pixels (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

**As to claims 16**, Koo teaches wherein the different directions of the channel regions are determined by mobility values of the channel regions of the driving thin film transistors of the red sub-pixels, the blue sub-pixels and the green sub-pixels (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

**As to claim 17**, Koo teaches wherein the different directions of the channel regions are determined so that the channel region of the semiconductor active layer of the driving thin film transistors of a green sub-pixel has the smallest mobility value (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-

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67).

As to claim 21, Koo teaches wherein the different directions of the channel regions are determined by the directions of grain boundaries of the polycrystalline silicon of the channel regions (figures 1 & 5-8, column 5, lines 20-67, column 6, lines 30-67, column 7, lines 1-11, column 7, lines 54-67 and column 8, lines 1-67).

#### *Allowable Subject Matter*

4. Claims 9-10, 15, 18, 22-31 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mitnaga et al. (5,808,321) teach a semiconductor device with recrystallized active area.

Voutsas et al. (2003/0025119 A1) teach an LCD device with optimized channel characteristics.

Yamazaki et al. (2003/0062845 A1) teach a light emitting element and crystallinities of semiconductor regions composing active layers.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to

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reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe whose telephone number is 571-272-7681.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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or faxed to: 571-273-8300 (for Technology Center 2600 only)

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Mansour M. Said

12/8/06



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